



Concept Study Guidelines and Criteria: Technical, Management, and Cost (TMC)

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August 28, 2017



Guidelines and Criteria for the Phase A Concept Study

Concept Study
Guidelines and
Criteria: TMC

- The ***Draft Guidelines and Criteria for the Phase A Concept Study*** document is in the Program Specific Documents, Referenced in the AO section of the Astrophysics MDEX and MO Program Libraries.
 - MDEX: https://explorers.larc.nasa.gov/APMDEX2016/MDEX/pdf_files/2016-Astro-MDEX-Draft-2-CSR-Guidelines.pdf
 - MO: https://explorers.larc.nasa.gov/APMDEX2016/MO/pdf_files/2016-Astro-MDEX-Draft-2-CSR-Guidelines.pdf
- This document contains instructions for preparation of the Concept Study Report (CSR).
 - Requirements are designated as CS-1 to CS-97.
 - Note the following language from the document:
 - All program constraints, guidelines, definitions, and requirements specified in the MDEX AO or the PEA are applicable to the CSR, except as noted herein.
 - In case of conflict between the MDEX AO, the SALMON-2 AO, or the PEA, and the CSR Guidelines, the CSR Guidelines take precedence.
 - Each CSR must be a self-contained document and must not refer to information contained in the Step 1 proposal.



Guidelines and Criteria for the Phase A Concept Study (continued)

Concept Study
Guidelines and
Criteria: TMC

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- The format of the CSR is specified in Sections A through M.
 - The CSR Structure and Page Limits are specified on page 14.
 - 5 pages for Executive Summary.
 - 30 pages for Science Investigation (highlight changes from Step 1).
 - Sections F through J: 98 for full mission **or** 75 for missions of opportunity + 2 pages for additional science instruments + 2 pages for each additional separate, non-identical flight elements + 5 pages for SC if one is proposed.
 - No page limit for Cost Proposal (formats are specified).
 - No page limit for Justification and Cost Proposal for optional SEO Activities.
 - No page limit for Section M, Appendices, on specific topics.
 - Appendices should not be renumbered.
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Guidelines and Criteria for the Phase A Concept Study (continued)

Concept Study
Guidelines and
Criteria: TMC

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- Two signed originals of the CSR and sixty CD-ROMs (CDs) or single-layer DVD-ROMs (DVDs) containing unlocked, bookmarked, and searchable PDF file(s) of the CSR – limited to the main body of the CSR, all tables, all appendices, and the MEL – as well as a separate PDF of the Fact Sheet, Microsoft Excel files of cost tables and the MEL, Microsoft Project schedule files, references not publicly available , and any optional cost files delivered NLT 4 p.m. ET, May 24, 2018.
 - Materials identified as subject to U.S. export laws and regulations, in accordance with the MIDEX AO Section 5.8.3, must be marked.



Updated Criterion C Factors

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- Factor C-4, Adequacy and robustness of the management approach and schedule, including the capability of the management team.
 - Addition of subfactor for small business subcontracting plan including small disadvantaged businesses.
 - Risk management aspects moved to new Factor C-6.
 - Factor C-6, Adequacy of the risk management plan.
 - Includes risk management aspects of Factor C-4, Adequacy and robustness of the management approach and schedule, including the capability of the management team.
 - Factor C-7, Ground systems.
 - Assessment of the proposed mission operations plans, facilities, hardware and software, etc.
 - Factor C-8, Approach and feasibility for completing Phase B.
 - Assessment of the completeness of plans.
 - Assessment of the adequacy of the approach.
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Guidelines: Items Deferred at Step-1

Concept Study
Guidelines and
Criteria: TMC

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- **Detailed disposal plan** (MIDEX AO Section 5.2.7)
 - **Science Enhancement Option and its cost** (MIDEX AO Section 5.1.5)
 - **Independent Verification and Validation of Software** (MIDEX AO Section 4.5.1)
 - **Costing of Conjunction Assessment Risk Analysis** (MIDEX AO Section 4.5.4)
 - **Schedule-based end-to-end data management plan** (MIDEX AO Requirement B-23, and Section F.5 in the CSR Guidelines document)
 - **Requirements for real year dollar costs** (MIDEX AO Section 5.6.2, Requirement B-13, Requirement B-50, and Requirement B-51)
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Guidelines: Part II, Required Quantities, Media, Format, and Content

Concept Study
Guidelines and
Criteria: TMC

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- Requirement CS-8. Provide a list of the individuals who have participated in the concept study (e.g., individuals who worked on the CSR, any CSR contributor, Red Team member, reviewer, *etc.*) and/or whom you are proposing to provide work should the mission be down-selected. Additionally, provide a list of all known institutions with any interests in the mission, including all contributors and vendors. Provide a draft list of the participants as a Microsoft Excel spreadsheet document to the point-of-contact listed below, three months prior to the due date of the CSR. Use the Microsoft Excel spreadsheet template that has been posted to the Program Library. This list is to be updated and a final revision shall be included on the CD or DVD at the time of CSR submission.
 - Requirement CS-9. Create a separate document that contains a table with all of the requirements (Requirement CS-1 through Requirement CS-97) and the page, section, or table number that is the main place in the CSR where the requirement is addressed. Provide this table as a PDF document to the point-of-contact listed above by email no later than seven days after the CSRs are due.



Guidelines: Section H, Management

Concept Study
Guidelines and
Criteria: TMC

- Provide quantitative risk assessments, where the probability and impact of occurrence are independently and numerically specified prior to mitigation; specification of probability and impact after mitigation is encouraged but not required. The products of pre-mitigation probabilities and impacts shall be included as encumbered cost reserves or explicitly identified in the basis of estimate, including cost validations.



Guidelines: Section J, Preliminary Design and Technology Completion (Phase B) Plan

Concept Study
Guidelines and
Criteria: TMC

- Once entering Phase B, Astrophysics Explorer projects will be subject to the same requirements as all other NASA missions. Note that the CSR only satisfies some of the KDP-B deliverable requirements, and that the balance will have to be developed early in Phase B (consistent with Section 2.2.7.1 in NPR 7120.5E: "In a two-step AO process, projects are down-selected following evaluation of concept study reports and the down-selection serves as KDP B. Following this selection, the process becomes conventional with the exception that products normally required at KDP B that require Mission Directorate input or approval will be finished as early in Phase B as feasible.").



Guidelines: Appendix M.4, Phase B Contract Implementation Data

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Guidelines and
Criteria: TMC

- This appendix provides data necessary for the Explorers Program Office to modify the contract during the Bridge Phase in order to add Phase B activities to the contract. Provision of Phase B contract implementation data may be deferred to the date of each concept study team's site visit.



Guidelines: Appendix M.16, Additional Cost Data to Assist Validation (Optional)

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Guidelines and
Criteria: TMC

- In addition to the specific cost table data requested in Section K, Cost Proposal, investigation teams may also provide any additional costing information/data that they feel will assist NASA to validate the project's proposed costs. Vendor quotes, cost estimates, rationale for design heritage cost savings, are all examples of data that can be included here. Input and output files for any publicly available cost model may be included on each submitted CD/DVD, if accompanied by discussion appendix M.16 of the PDF file.



Guidelines: Appendix M.20, References

Concept Study
Guidelines and
Criteria: TMC

- Requirement CS-97. This section shall provide a list of any internal program and project management standards to be used in the proposed development (e.g., GEVS, “GOLD Rules”). To the extent practicable, the referenced documents shall be included on the CD/DVD.



Site Visits

- Site visits with oral briefings will be used to clarify implementation details and commitments.
 - Site visits are anticipated during the September-October 2018 timeframe at location sites to be coordinated between the PI/Proposal Team and NASA HQ/SOMA.
 - Briefings for each site visit will be limited to approximately eight hours.
 - All site visit presentations/briefings should be in a plenary session with all Evaluation Team members attending - no splinter sessions.
 - Written significant weaknesses, questions, and/or requests for information will be provided to the PI/Proposal Team 8 days before the site visit. All teams will have the same lead time.
 - Some questions will require an early response, 2 days before the site visit.
 - Any additional information provided to NASA by the investigation team at the site visit, in response to the NASA-identified weaknesses and questions, or in response to NASA requests for additional information, will be treated as updates and clarifications to the CSR.
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ISS and BPO Points of Contact

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Guidelines and
Criteria: TMC

- International Space Station (ISS) Point of Contact:
George Nelson
ISS Research Integration Office
george.nelson-1@nasa.gov
(281) 244-8514
 - Balloon Program Office (BPO) Point of Contact:
Gabriel Garde
gabriel.j.garde@nasa.gov
(757) 824-2598

Backup – Debora Fairbrother
debora.a.fairbrother@nasa.gov
(757) 824-1453
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Additional and Updated Program Library Documents

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Guidelines and
Criteria: TMC

Updated:

- Guidelines and Criteria for the Phase A Concept Study, Draft 2
- CSR Conflicted Party List

Additional:

- FY16 NASA Inflation Tables
- NASA Plan for Increasing Access to the Results of Scientific Research
- NPR 1600.1A, *NASA Security Program Procedural Requirements*
- Program Level Requirements Appendix (PLRA) Examples for NuSTAR and IBEX
- The Explanatory Guide to the NASA Science Mission Directorate Educational Merit Evaluation Factors for Student Collaboration Elements (new only to MINDEX)



BACKUP



Updated/New Criterion B Factors

Concept Study
Guidelines and
Criteria: TMC

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- Factor B-1, Merit of the instruments and mission design for addressing the science goals and objectives.
 - Includes details on data collection strategy and plans.
 - Factor B-2, Probability of technical success.
 - Includes assessment of technology readiness, heritage, environmental concerns, accommodation, and complexity of interfaces for the instrument design.
 - Factor B-5, Probability of science team success.
 - Collaborator roles not evaluated for the CSR.
 - Factor B-8, Maturity of proposed Level 1 science requirements and Level 2 project requirements.